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IN
AGRICULTURAL ENGINEERING

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ENGINEERING

Vol. 1, No. 6. WASHINGTON, D. C. January, 1932.

Agricultural engineering.

Contribution of agricultural engineering to rural life. By S.H.McCrory. Agricultural Engineering. v.12, no.12. December 1931. p.447-449. Agricultural engineer is helping farmer to make best use of land he has; to expand his business of releasing land, buildings and energy for profit-yielding operations; to make progress which in end can be correctly expressed only in terms of higher plane of rural living.

Problems before new Bureau of Agricultural Engineering. Engineering news record. v.107, no.27. December 31, 1931. p.1027. Three major lines of activity: 1) Improvement of land, 2) Farm structures and their equipment, 3) Farm power and machinery.

Some of the problems awaiting the agricultural engineer: Editorial. Implement and machinery review. v.57, no.680. December 1, 1931. p.782.

Agriculture.

Mechanization of agriculture as a factor in labor displacement. Monthly labor review. v.33, no.4. October 1931. p.1-35. Early agriculture in the United States; Beginnings of agricultural mechanization; Hand and machine labor requirements in different farm operations; Effects of introduction of automotive power upon agricultural labor requirements; Development in agriculture as a whole, and the present agricultural situation; Technological labor displacement in agriculture, and the unemployment situation; Probable development of agricultural mechanization in the near future; General results of agricultural mechanization.

Secretary Hyde states the case. By Arthur M. Hyde. American agriculturist. v.128, no.18. November 7, 1931. p.5,14. Land policy needed; Agriculture over-expanded.

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United States Department of Agriculture
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Vol. 1, No. 6. Washington, D. C. February, 1922.

Agricultural engineering.

Contribution of agricultural engineering to rural life. By S.W. Sparrow. Agricultural Engineering. v.2, no.12. December 1921. p.447-448.
Agricultural engineer in Belgian farmer to make best use of land he has, to expand his business of raising food, building and energy for profitable operations; to make processes which is and can be correctly expressed only in terms of higher plane of rural living.

Problems before new Bureau of Agricultural Engineering. Engineering News record. v.107, no.27. December 21, 1921. p.1027. Three major lines of activity: 1) Improvement of land, 2) Farm structures and their equipment, 3) Farm power and machinery.

Some of the problems confronting the agricultural engineer. Editorial. Implement and machinery review. v.42, p.480. December 1, 1921. p.722.

Agriculture.

Mechanization of agriculture as a factor in labor displacement. Monthly Labor review. v.13, no.4. October 1921. p.1-26. Early agriculture in the United States; Beginnings of agricultural mechanization; Hand and machine labor requirements in different farm operations; Effects of introduction of machine power upon agricultural labor requirements; Development in agriculture as a whole, and the present agricultural situation; Technological labor displacement in agriculture, and the unemployment situation; Probable development of agricultural mechanization in the near future; General results of agricultural mechanization.

Secretary Hyde states the case. By Arthur M. Hyde. American agriculturist. v.122, no.18. November 7, 1921. p.5,14. Land policy needed; Agriculture over-expanded.

Agriculture. (Cont'd)

What the farm contributes to farm family living. By E.B.Hill and H.A.Berg. Michigan. Agricultural Experiment Station. Quarterly bulletin. v.14, no.2. November 1931. p.94-96. Records kept by 51 farmers in 1929 show $372.47 of farm products were furnished by farm to the farm family.

Air conditioning.

Air conditioning and space cooling as featured at the National ice convention. Refrigeration. v.50, no.6. December 1931. p.38,40,42.

Fundamentals of air conditioning in the home. By F.B.Rowley. Domestic engineering. v.137, no.6. December 12, 1931. p.32-36,106,108. Summary of practical air conditions required for health and comfort:

1. Physical properties of air - temperature, humidity, air motion.
2. Proper air volume and distribution.
3. Air cleanliness or freedom of any objectionable features.

Refrigeration applied to air conditioning. By A.N.Chandler. Southern power journal. v.45, no.11. November 1931. p.31-35. Concerns refrigeration equipment, design and type available, and detail of installation and operation.

Associations.

A.S.A.E. power and machinery meeting: Report on various papers presented. Farm Implement News. v.52, no.50. December 10, 1931. p.18-20.
Is power farming depression-proof; Rootbeds vs seedbeds; Feeds and feed grinding; Beet sugar mechanization; Grain and forage drying.

A.S.R.E. convention program, Cleveland, January 26-30. Refrigeration. v.50, no.6. December 1931. p.20.

Early January conventions: Iowa, Minnesota and Western meetings next. Farm Machinery and Equipment. no. 1776. December 15, 1931. p.14.

Manufacturers elect new officers. Implement record. v.28, no.12. December 1931. p.17.
National Association of Farm Equipment Manufacturers.

Associations. (Cont'd.)

Official roster of implement dealers' associations. Farm Machinery and Equipment. no.1775. November 15, 1931. p.33. Names, Officers, home addresses and convention dates.

Ohio implement dealers' convention. By C.L.Reifsnider. Farm Implement News. v.52, no.52. December 24, 1931. p.12-13,19.

Resolution that was not passed. By Frank W.Squire. Farm Implement News. v.53, no.1. January 7, 1932. p.20-21,32. Convention discussion involving price-cutters, trade-ins, blacksmiths and paint.

Resolutions adopted by N.A.F.E.M. at annual convention, Chicago, Illinois, October 23, 1931. Hardware and Implement Journal. v.36, no.12. December 1931. p.21-24. Cooperation of Trade and Farm press; Farm equipment and the tariff; Research department; Taxation; A.S.A.E.; Prison made farm equipment; Flood control; U.S.Department of Commerce; U.S. Department of Agriculture; Retail price maintenance; Inland waterways; American Farm Bureau Federation; Bureau of Agricultural Engineering.

Society and research activities. Power. v.75, no.1. January 5, 1932. p.39-40.

Technical divisions show progress at Chicago meetings. Agricultural Engineering. v.12, no.12. December 1931. p.458-460. Power machinery; Structures; Land reclamation; Annual meeting plans.

Barns.

Heated dairy barns. By J.L.Strahan. Farm journal. v.56, no.1. January 1932. p.9,25. Insulation and ventilation enable cows to keep barn warm.

Building.

Brickwork engineering. By Major L.B.Lent. Pt.2. Building economy. v.7, no.10. November 1931. p.20-21. Heat transmission properties; Sound transmission properties; Weather resistant properties and durability; Designing brick masonry - Footings.

Exploding the winter building slump myth. American Builder and Building Age. v.52, no.1. October 1931. p.36-38, 100. No sound reason for inactivity, study of cold weather methods shows.

Factors affecting the strength of masonry of hollow units. By Douglas E.Parsons. Washington, 1931. 857-867p. U.S. Bureau of Standards. Research paper no.310.

Latest outstanding development in home building construction. By L.Brandt. American Builder and Building Age. v.52, no.1. October 1931. p.72-73. Diagrammatic view of reinforced super-wall in which interstud spaces are filled with mineral wool insulation and ceiled both sides with waterproofed, steel reinforced plaster or masonry.

Pier shed farming placed diagonally for efficiency. By J.H.Kershaw. Engineering news record. v.107, no.27. December 31, 1931. p.1029. Briefly, framing plan involves placing floor beams and roof trusses diagonally with wall of shed and setting all columns at right angles to framing instead of to center line of pier except wall columns, which are set square with wall, better to accomodate wall-framing connections.

Rapid method for determining sunlight on buildings. By Howard T. Fisher. Architectural record. v.70, no.6. December 1931. p.445-453.

Some population trends and their relation to the construction industry. By Seymour L. Andrew. Architectural record. v.70, no.6. December 1931. p.395-397. Factors which tend to make demand for buildings greater: 1. Improvement in standard of living. 2. Shifts in population. 3. Relative increase in number of families. 4. Declining proportion of children - increasing proportion of adults.

Tests of flat-arch tile floors produce new design data: Advantages of concrete cover and large tierods indicated. Failures generally in skewback tiles. Engineering news record. v.107, no.25. December 17, 1931. p.964.

Building. (Cont'd.)

Volume changes in brick masonry materials. By L.A. Palmer. Washington, 1931. 1003 - 1026p. U.S. Bureau of Standards. Research paper no.321.

We've got to capitalize on low costs ... now! American Builder and Building Age. v.52, no.1. October 1931. p.32-35. Lowest building costs in 10 years.

Cisterns

Sand best outside filter. Wisconsin Agriculturist. v.58, no.42. October 31, 1931. p.11. Clean medium fine sand makes about most dependable outside sistern filter, where maximum cleansing is desired with comparatively rapid flow of water.

Concrete.

Precise concrete control at Koon Dam. Engineering news record. v.107, no.27. December 31, 1931. p.1024-1027. Semi-automatic batching and mixing plant installed to meet rigid concrete specifications. Drymix requires tamping with vibrators.

Cotton.

Cotton acreage bill published for first time. Cotton ginners' journal. v.3, no.2. November 1931. p.5,9-12. Passed at last called session of Texas legislature.

Cotton stalks, a new source of rayon. By Peter A. Carmichael. Scientific American. v.145, no.4. October 1931. p.248-250.

Determination of the winter survival of the cotton boll weevil by field counts. By Edgar F. Grossman and P.W.Calhoun. Florida. Agricultural Experiment Station. Bulletin no.233. 1931. 47p.

Cotton. (Cont'd.)

Factors affecting grades of cotton. By D.Howard Doane. Agricultural Engineering. v.12, no.12. December 1931. p.438. 1. Drier materially improves grades. 2. Drying reduces weight. 3.Drying under some conditions appears to shorten staples. 4. Drier increases efficiency of gins. 5. Grade of early-picked cotton appears to be improved by sunning or seasoning in cotton house. 6. Steaming does not bring back shortened staple or materially improve harsh feel of cotton that has been overdried. 7. Little relation between rapidity of picking and grade.

Fertilizers for cotton soils. By J.J.Skinner. 1931. 9p. U.S. Department of Agriculture. Miscellaneous publication no.126.

How will ginning find adjustment to reduced acreage? Two Texas manufacturers write about problem. Cotton Ginners' Journal. v.3, no.3. December 1931. p.5,13,16.

Dams.

Composition of earth dams. Part IV: Discussion. Engineering news record. v.107, no.24. December 10, 1931. p.917-922. Water content is a major factor in determining permeability. By E.McD. Moore. Stability during construction must be considered. By Norman F. Williams.

Dam sites must be preserved. California cultivator. v.77, no.21. November 21, 1931. p.467.

First six months' progress at Hoover Dam: Remarkable accomplishments during summer of record heat - Boulder city housing and feeding facilities completed - Highways and railroad built to bottom of gorge - 14,000 ft. of pioneer headings driven for diversion tunnels. Engineering news record. v.107, no.24. December 10, 1931. p.923-926.

Drainage.

Ditching the bed of the Zuider Zee. Farm Implement News. v.53, no.1. January 7, 1932. p.28-29.

Economical use of large tile for land drainage. By Roger D. Marsden. 1931. 24p.

Drainage. (Cont'd.)

Land drainage in Minnesota faces financial failure: Widespread drainage with counties guaranteeing bonds proves unsuccessful. Many counties unable to cover bond issues. Engineering news record. v.107, no.24. December 10, 1931. p.916. Land drainage for farm development undertaken on large scale, without any topographic mapping or soil studies to determine whether lands were suitable for agriculture.

Drills.

Drill truck bottoms nineteen hundred holes a day. By Frederic J.Meystre, Jr. Engineering News Record. v.107, no.27. December 31,1931. p.1039-1041. Rock bottom of West Neebish channel in St. Marys river being deepened 6 ft. by cut 9,400 ft. long and 300 ft. wide, using gang-drill trucks with ten drills.

Electricity on the farm.

Application of hydro-electric power to farm work. Hydro-electric power commission of Ontario. Bulletin. v.17, no.11. November 1931. p.395-401.

Cost of farm electrification: Editorial. Farm Implement News. v.52, no.51. December 17, 1931. p.10. Minimum invested capital per farm would be around $1000 counting both utility company's and farmer's shares. Maximum around $3000.

Declares rural lines cost too much. Electrical World. v.98, no.22. November 28, 1931. p.952-953. Commission engineer finds neither rhyme nor reason in farm line building practices as regards costs or quality. Contends adequate low-cost construction should be standardized.

Developing business on electrical equipment for the farm. By Prof. E.W.Lehmann. Farm Implement News. v.52, no.53. December 31, 1931. p.14-15.

Economical rural line construction. By C.M. Jennings. Electrical World. v.98, no.26. December 26, 1931. p.1136-1137.

Electricity on the farm. (Cont'd.)

Electricity -- the farmer's servant. By J.P.Schaenzer. American thresherman. v.34, no.8. December 1931. p.6-7,18.

Electricity on the farm and in rural communities. Rev. ed. Chicago, Ill., Committee on relation of electricity to agriculture. 1931. 332p.

Indiana farms turn to electric equipment. Jersey bulletin. v.50, no.51. December 23, 1931. p.2134. Indiana farms at rate of 2101 annually are modernizing their power equipment.

Lighting as a direct means of increasing the productivity of the farm. By R. Borlase Matthews. Rural electrification. v.7, no.78. November 1931. p.188-191.

Michigan stresses electrification. By E.J.Perkins. Farm Machinery and Equipment. no.1776. December 15, 1931. p.10,31-32,34. Lansing convention features importance of Rural Electrical Equipment. Henry A.Schantz re-elected president.

Progress in the electrification of the country side. Rural Electrification. v.7, no.78. November 1931. p.173-174.

Simplifying farm wiring. By B.W.Faber. Electric Journal. v.28, no.12. December 1931. p.660.

What future for application of electricity in agriculture. By E.A.White. Electricity on the farm. Merchandising supplement. v.4, no.11. November 1931. p.S2-S4.

Erosion.

Anti-erosion machine. By John Bird, Jr. Country Gentleman. v.101, no.11. November 1931. p.24. Digs small depressions in soil.

County wide soil erosion campaign. By Lloyd Godley. Oklahoma extension news. v.13, no.2. January 1932. p.1.

Strip cropping to prevent erosion. By H.V.Geib. U.S. Department of Agriculture. Leaflet no. 85. 1931. 6p.

Extension.

Farmers and agents write their opinions.
Ohio extension service news. v.17, no.5.
December 1931. p.4-5.

Taking stock of extension work. By H.C.Ramsower.
Ohio extension service news. v.17, no.4.
November 1931. p.6-7. Ultimate purpose of Extension service is to promote physical, mental, spiritual, and social growth of individual farmer, his wife and his children. According to our present point of view this can best be done by assisting them in analyzing their problems, in finding solutions for them, and in bringing about active participation in formulating and carrying out the plans necessary to put these solutions into effect.

Farmhouses.

Beautifying country homes. By Inez Derryberry.
Texas. Agricultural and Mechanical College.
Extension service. 1931. 24p.

Need for farm house standards. By Deane G. Carter.
Agricultural Engineering. v.12, no.12.
December 1931. p.445-446.

Prize winning farm home. By George P. Hutchins.
Successful farming. v.30, no.1. January 1932.
p.12,34-35.

Farm machinery and equipment.

An expensive dud: Editorial. Farm implement news. v.52, no.52. December 24, 1931. p.10.
Discussion of census report on agricultural implement distribution.

Census reports on farm gasoline engines, electric motors and electric lighting. Farm implement news. v.52, no.52. December 24, 1931. p.15.

Combine takes on new tasks. By Burt Wermuth.
Michigan farmer. v.177, no.19. November 7, 1931. p.343.

Demonstration of a planting machine.
Implement and machinery review. v.57, no.680.
December 1, 1931. p.791-792.

Diesel tractor to be sold with sealed spare injection units. Automotive industries. v.65, no.26. December 26, 1931. p.993-994.

Feeders' opportunity. By L.R.Neel. Southern agriculturist. v.61, no.1. November 1931. p.3.

Forty years in retrospect. By Dean Alfred Vivian. Ohio extension service news. v.17, no.4. November 1931. p.3-4. To create an enriched life in the farm home is only reason for existence of college of agriculture.

Fowler diesel gyrotiller. Australian sugar journal. v.23, no.8. November 5, 1931. p.430,435. Self-propelled power driven rotary soil pulveriser, producing exceedingly high degree of tilth. Advantages claimed: 1.Improved quality of work. 2. Lower cost of soil preparation. 3. Saving in time and labour. 4. Greater convenience and mobility.

General purpose wheat tractor. Farm implement news. v.52, no.53. December 31, 1931. p.16-17. Murnane-Webb offers complete, standardizated and versatile power and equipment for grain grower of size to fit one family farm, requiring less weight and less investment than is necessary under present practice where each tool is complete machine in itself rather than consisting only of essential operating parts mountable on tractor chassis.

Hiram Moore and his combine. By Burt Wermuth. Michigan farmer. v.177, no.17. October 24, 1931. p.307,319.

Horse or the tractor? : Editorial. New Jersey agriculture. v.14, no.1. January 1932. p.4.

Idaho draper type windrower. Farm implement news. v.52, no.52. December 24, 1931. p.14. Two general styles. 1.To operate with certain standard 5- foot horse mowers. 2. Attached to tractor mowers of type mounted on general purpose tractors.

Implements and machinery at the Smithfield show. Implement and machinery review. v.57, no.680. December 1, 1931. p.795-818. Editorial: p.781-782.

Lewis's new potato digger. Implement and machinery review. v.57, no.680. December 1,1931.

Machines cutting crop costs. Farm implement news. v.52, no.51. December 17, 1931. p.8, 22. Extracts from Annual report of Secretary of Agriculture. Family-farm system conserved by power equipment. New Agricultural Engineering Bureau.

Motorization of American farm causes fundamental changes in crop geography. Automotive industries. v.65, no.26. December 26, 1931. p.980-982. Displacement of burden-bearing animals has released fodder for meat and milk producers. Truck farms have been developed in industrial areas by "amphibian" agriculturists with time to spare.

New developments in machinery for processing animal feeds. By F.J.Bullock and F.H.Hamlin. Agricultural engineering. v.12, no.12. December 1931. p.431-434.

New hoe. British sugar beet review. v.5, no.4. December 1931. p.88. "Easihoe". Advantages: 1. Leaves even tilth and does not cover small plants. 2. Breaks up surface crust with minimum displacement of soil. 3. Does not cut or injure plants. 4. Gives better soil aeration.

New type of open tire wheel. Farm machinery and equipment. no.1776. December 15, 1931. p.18. French and Hecht wheel. Advantages: 1. Widens uses of general purpose tractors and increases their efficiency. 2. Does not pack soil. 3. Provides maximum traction in loose soils. 4. Self cleaning in wet and sticky soils. 5. Easily converted into different types of wheels without removing lugs.

1932 will reward stout hearts: Editorial. Implement and tractor trade journal. v.47, no.1. January 2, 1932. p.7. More wornout equipment than normal to be replaced and better farm morale give hope for increased volume to those who fight.

Practical farm equipment for dressing hogs. By K.F. Warner. Nebraska farmer. v.73, no.49. December 12, 1931. p.4. Diagram of hog scalding equipment.

Farm machinery and equipment. (Cont'd.)

Section des tracteurs maraiches. Génie rural. October 1931. p.35-36. Garden tractors.

Sees hope in farm mechanization. Implement and tractor trade journal. v.46, no.26. December 19; 1931. p.11,22. Effect in lowering production costs discussed in Secretary Hyde's annual report. No threat against family system of farming.

Some timely suggestions from your only customer. By Edward A.O'Neal. Hardware and implement journal. v.36, no.12. December 1931. p.17-18,30-31.

Sur le terrain de la minière. Génie rural. October 1931. p.27-34. Discussion of various makes of tractors (American and foreign)

Tank heaters for winter days. Implement and tractor trade journal. v.47, no.1. January 2,1932. p.9. Stock tanks should be banked and covered during winter. Also recommended that gravel and cinders be placed around both tanks and waterers to prevent accidents due to slipping on icy yards.

When grinders pay: Editorial. Farm implement news. v.52, no.51. December 17, 1931. p.10. Ohio studies on rural electrification found that where 25 to 30 tons of grain are ground yearly, purchase of both feed grinder and electric motor to run it became economic.

Fertilizer spreaders.

New fertilizer distributors do better work. Farm implement news. v.52, no.51. December 17, 1931. p.15. Tests made at Ohio experiment station. New attachments place fertilizer in lateral bands. Potatoe planters equipped to handle fertilizer.

Fertilizers.

Characteristics of commercial fertilizers. By Prof. F. L.Duley. Farm implement news. v.53, no.1. January 7, 1932. p.22-24.

Color in fertilizers. By John O. Hardesty and John T. Scanlon. Industrial and engineering chemistry. v.23, no.12. December 1931. p.1431-1433. Study was made of three methods of coloring synthetic fertilizer materials: by adding concentrated dye solution

to melt of material to be colored, by adding dye solution to strong solution of material and evaporating to dryness with stirring, and by thoroughly mixing small amount of concentrated dye solution with dry material.

Effect of nitrogenous fertilizers on soil acidity. By W.H.Pierre. Industrial and engineering chemistry. v.23, no.12. December 1931. p.1440-1443. Importance of recognizing action of newer synthetic nitrogenous fertilizers on soil acidity is discussed in relation to rapid expansion of synthetic nitrogen industry and to present liming practice. Studies are reported of agricultural lime consumption of various states as compared to amount of lime which would be required if nitrogen fertilizers were all acid forming.

Penny saved is penny earned: Right care and use of farm manure will save dollars instead of pennies. American agriculturist. v.128, no.19. November 14, 1931. p.3,6. Diagram gives details of covered concrete manure shed with pit for liquids.

Flood control.

Device for heightening levees threatened with overtopping. By John B. Drisko. Engineering news record. v.107, no.24. December 10, 1931. p.937.

Frost protection.

Orchard heating studies. By Jack Klein. California cultivator. v.77, no.21. November 21, 1931. p.469,471.

Fuels.

Agricultural fuel and lubricants. Farm implement news. v.52, no.53. December 31, 1931. p.16. Report by Committee of American Society of Agricultural Engineers.

Appraisal of rival fuels at the close of business, 1931. By J.George Kohl. Fuel oil journal. v.10, no.7. January 1932. p.24,26,92-97.

Heating.

Developments in heating and ventilating. Power. v.75, no.1. January 5, 1932. p.31. Attention has been given to improvements in control equipment for orificed heating systems, thermostatic radiator valves, and air-conditioning units.

Eradication vs. smoke control to save sunshine. By Fred O. Tonney. Municipal sanitation. v.3, no.1. January 1932. p.14,17. Adoption of new methods of heating suggested as remedy for atmosphere pollution.

Heat balance in oil burner installations. By A.M.Daniels. Domestic engineering. v.137, no.6. December 12, 1931. p.68-72.

Heating in residences and small structures. By H.L.Alt. Pt.V. Domestic engineering. v.137, no.4. November 14, 1931. p.42-44,137. Discusses sizes of supply and return lines for overhead down feed system of hot water heating.

New and gross heating values: Their definition and proper use. By Horace C.Porter. Industrial and engineering chemistry. v.23, no.12. December 1931. p.1433-1434.

Practical comments on the maintenance of air heaters. By Louis C.Whiton, Jr. Power. v.74, no.26. December 29, 1931. p.936-939. Plate spacing very important; Erosion and soot deposits; Causes of corrosion; Use of soot blowers; Effect of duct layout; Baffles may cause trouble; Bypassing air and gas; Bulging of plates; Recirculation.

Refrigeration cycle as a source of heat. Refrigerating world. v.66, no.12. December 1931. p.13-15,54.

Thermodynamics of difference between fross and net heating values, solid and liquid fuels. By L.C.Lichty and B.L.Brown. Industrial and engineering chemistry. v.23, no.12. December 1931. p.1419-1421. Thermodynamic principles involved in determination of difference between gross and net heating values for both constant-volume and constant pressure combustion of solid and liquid fuels are discussed. Temperature-volume or pressure diagram is shown representing burning and cooling processes, which illustrates reason for and fixes definition of difference between gross and net values.

Heating. (Cont'd.)

Variables in temperature control. By Earl Brown. Domestic engineering. v.137, no.5. November 28, 1931. p.73-75. What happens in heating two-story residence when automatic gas burner, oil burner or stoker is operated by single and centrally located temperature control device.

Hitches.

Tractor hitch for header. By Tudor J. Charles, Jr. Country gentleman. v.101, no.11. November 1931. p.24.

Houses.

Aluminium in buildings: Metal walls, frame and floors for new type home. Australasian electrical times. v.10, no.10. October 27, 1931. p.417-418.

Better house construction and financing demanded by home-building conference: Reports of 31 committees emphasize neglet of low-cost housing, persistence of inefficient design and construction methods, and burden of loans and taxation. Engineering news record. v.107, no.24. December 10, 1931. p.939-941.

Hoover home building conference will aid construction. Brick and clay record. v.79, no.10. December 1931. p.459-460, 486. Importance of home building; Need for substantial construction, good design emphasized; Industry's leaders to cooperate.

Materials for mass production. By John E.Burchard, 2nd. Architectural forum. v.55, no.4, pt.2. October 1931. p.507-514. To create inexpensive small house of high quality, cost of field labor must be reduced. Materials must be fabricated in large units of high standard grade and must be designed to facilitate and speed up job assembly.

Size of rooms in five-room houses. By Dan Scoates. Agricultural engineering. v.12, no.12. December 1931. p.450-451.

What does the architect know about small house costs? By Henry Wright. Architectural record. v.70, no.6. December 1931. p.431-434.

Houses. (Cont'd.)

What I learned about log house construction. By R.Harold Zook. American architect. v.140, no.2599. September 1931. p.24-27,76,78. Kind of trees; How to build; How to keep bark on.

Houses, Remoldeling.

Possibilities in reconditioning: Editorial. Engineering news-record. v.107, no.24. December 10, 1931. p.912.

Remodeling country property for comfort. By R.M.Starbuck. Domestic engineering. v.137, no.5. November 28, 1931. p.30-32.

Hydraulics.

Institute of hydraulic research opened at University of Iowa. Water works and sewerage. v.78, no.12. December 1931. p.350. Organized to afford an agency for coordination of talent, facilities and resources that may be available at University for undertaking projects of unusual magnitude, scope, or complexity in field of hydrology and hydraulic engineering.

Work started on a national hydraulic laboratory in Washington. By Blake R. Van Leer. Engineering news record. v.107, no.26. December 24, 1931. p.996-998. New structure will fill long-felt need for adequate facilities for studying many hydraulic problems of several federal departments and will provide opportunities for important private research.

Insulation.

First foil-insulated motor truck in America. Power wagon. v.47, no.324. December 1931. p.[illegible] 30 pounds of aluminum foil (Alfol) substituted [illegible] of cork in new type of refrigerated body. Advantages: 1. Increases payload. 2. Speeds cooling. 3. Conserves refrigerating agent. 4. Insures more even temperature distribution.

Insulation. (Cont'd.)

Insulating ice house. Farmer. v.49, no.43. November 14, 1931. p.8. Sawdust or mill shavings most effective common materials used. 12 inches underneath and all around ice, about 18 inches on top. Hay or straw may be used, but twice thickness is necessary. Swamp hay or flax straw better than straw.

Insulation for comfort. American builder and Building age. v.52, no.1. October 1931. p.48-50. Economy in fuel cost, made possible by insulation, pays excellent rate of interest on investment.

Irrigation.

Annual report. Queensland Commission of irrigation and water supply. Brisbane, 1931. 50p.

Earth lining of main canal, Vale project, Oregon. By Chas. C. Ketchum. New reclamation era. v.22, no.12. December 1931. p.270-271. Much leakage stopped, altho some sections may require more permanent type of lining in the future.

Home Hill irrigation scheme. Report by A.E.Axon. Australian sugar journal. v.23, no.8. November 5, 1931. p.411,413.

Irrigation development in Arizona. By M.E.Bemis. California cultivator. v.77, no.18. October 31, 1931. p.400. Table gives area, value, cost of operation and maintenance by counties, 1929, of irrigated farms in Arizona.

Irrigation increases almond crop. California cultivator. v.77, no.18. October 31, 1931. p.401.

Irrigation pumping plants. By Mark R.Kulp. Idaho. Agricultural Experiment Station. Circular no.66. 1931. 23p.

Measuring water in irrigation channels. By R.L.Parshall. U.S. Department of Agriculture. Farmers' bulletin no.1683. 1932. 17p.

Some studies of the need for irrigation. By O.E.Robey. Michigan. Agricultural Experiment Station. Quarterly bulletin. v.14, no.2. November 1931. p.71-76. Rainfall chart indicates supplemental water may be advantageous.

Irrigation. (Cont'd.)

Tablet marks beginning of American modern irrigation. New reclamation era. v.22, no.12. December 1931. p.277,280.

Tests of spray irrigation equipment. By F.E.Staebner. U.S. Department of Agriculture. Circular no.195. 1931. 30p.

Land.

Land surplus saps up farm profits. By Gilbert Gusler. Oregon farmer. v.53, no.23. December 3, 1931. p.3. Is the root of whole surplus crop problem requiring new national land policy,leaders declare.

National land policy. California cultivator. v.77, no.22. November 28, 1931. p.504. Recommendation of Chamber of Commerce of the U.S.

Needed - a land policy. By Arthur M. Hyde. Extension service review. v.2, no.12. December 1931. p.177-178. Aids of technology, improving standards of living, rural land problems, economy of production.

Recommendation of the National conference on land utilization, held at Chicago, Illinois. November 19-21, 1931.. 1931. 18p. mimeographed.

Shifts in farm land utilization in Michigan: 1930 census shows a reduction of land area in farms, 70 per cent of which is non-tillable and 30 per cent is in tillable land. By E.B.Hill and P.F.Aylesworth. Michigan. Agricultural Experiment Station. Quarterly bulletin. v.12, no.2. November 1931. p.96-100. Tables show changes in number of farms, per cent of land area in farms, and acreages of different classes of farm land, 1910-1930; Increase or decrease in different classes of land, 1925-1930; Increase or decrease in specific crops, 1925-1930.

Lubrication.

What oil should I use? By W.E.Miller. Pt.2. American thresherman. v.34, no.8. December 1931, p.8-9.

Miscellaneous.

Annual report. Arkansas. Agricultural Experiment Station. Bulletin no.268. 1931. 74p.
Agricultural engineering: p.12-15. Cotton machinery studies - utilization and cost of farm power - post preservation. Underground water survey in the Grand Prairie area. Farm buildings for Arkansas. Water cooling of milk and cream.

Annual report. U.S. Federal power commission. 1931. Washington, 1931. 282p.

Annual report. U.S. Federal trade commission. 1931. Washington, 1931. 241p.

Annual report. U.S. Secretary of the Interior. 1931. Washington, 1931. 172p.

Arkansas hops up smiling: Renewed confidence is inspired by noble harvests and bulging pantries. By William Johnson. Country gentleman. v.101, no.11. November 1931. p.6,70-71.

Auxiliary crops for the wheat country: Corn and sorghum rebuilt to fit the climate and the combine. By John Bird, Jr. Country gentleman. v.101, no.11. November 1931. p.13, 81-82.

Castles in the air. By Gove Hambidge. Country gentleman. v.101, no.11. November 1931. p.3-5,68.

Commerce yearbook: 1931. v.1 - United States. U.S. Bureau of Foreign and Domestic Commerce. Washington, 1931. 696p.

Farm real estate situation, 1930-31. By B.R.Stauber. U.S. Department of Agriculture. Circular no.209. 1931. 67p.

Fundamentals or specialization? By Dexter S. Kimball. Engineering news record. v.107, no.25. December 17, 1931. p.958-960. Engineering education, as basic factor in advancement of profession, must rest on fundamentals. What cooperation of college and technical society can accomplish.

Government services available to civil engineers. N.Y., American Society of Civil Engineers. Committee on publications, 1931. 36p. Manuals of engineering practice. no.7.

Miscellaneous. (Cont'd.)

High-speed internal combustion engine. By Harry R.Ricardo. London, Blackie & son, limited, 1931. 435p.

Iowa yearbook of agriculture: 1930. Iowa state Department of Agriculture. 1931. 680p.

Movement of open country population in Ohio. By P.G.Beck and C.E.Lively. Ohio. Agricultural Experiment Station. Bulletin no.489. 1931. 46p.

1932 agricultural outlook for Virginia: Recommendations for Virginia farmers. Virginia. Agricultural and Mechanical college. Bulletin no.125. 1931. 40p.

Progress of standardization in the Soviet Union. Commercial standards monthly. v.8, no.6. December 1931. p.180-182. Report of Supreme Economic Council of Soviet Union states that standardization must be completed in all industries to make possible 5-year plan in four years.

Report of the Committee on Federal state relations in agricultural research. Association of land grant colleges. 1931. 18p. mimeographed.

Russia's objective. By John M. Carmody. Factory and industrial management. v.82, no.4. October 1931. p.479-482,528.

Secretary Hyde opposes farm expansion. Farm implement news. v.52, no.49. December 3, 1931. p.26. Would "slam a few doors" against drainage, irrigation, forest clearing and dry farming.

Some high points in Hyde's report. Jersey bulletin. v.50, no.51. December 23, 1931. p.2129,2146. Sweeping readjustments necessary, wheat situation, tax problem, voluntary control of acreage.

Some observations on the engineering profession. By S.G.porter. Engineering journal. v.14, no.12. December 1931. p.622-623.

Some things engineers should know - How to solve formulas. By C.J.Mason. Southern power journal. v.45, no.11. November 1931. p.39-41.

Miscellaneous. (Cont'd.)

Some trends in rural social organization in four Ohio counties. By E.D.Tetreau, R.C.Smith and J.P. Schmidt. Ohio. Agricultural Experiment Station. Mimeograph.Bulletin no.42. 1931. 44p.

Spirit of the land-grant institutions. By W.J.Kerr, Eugene Davenport, E.A.Bryan, and W.O.Thompson. Addresses delivered at Annual convention of Association of land grant colleges and universities. 1931. 60p.

Study of the organization and management of Rhode Island farms. By J.L.Tennant. Rhode Island. Agricultural Experiment Station. Bulletin no.230. 1931. 56p.

Vocational training and unemployment. Washington, Federal Board of Vocational Education, 1931. 29p. Bulletin no.159, General series no.4. Discussion of the question. What service can the public program of vocational education to the unemployed?

You can make it for camp and cottage. National committee on wood utilization. 1930. 49p. Practical uses for secondhand wooden containers and odd pieces of lumber.

Mulching.

Some effects of straw mulch on yield of potatoes. By John Bushnell and F.A.Welton. Journal of Agricultural research. v.43, no.9. November 1, 1931. p.837-845. Straw mulch reduced soil temperature below that of cultivated plots, conserved moisture content and depressed nitrates.

Painting.

House painting methods with the brush and spray gun. By F.N.Vanderwalker. Chicago, Frederick J. Drake and co., 1930. 382p. Industrial painting on steel, iron, cement, brick and wood surfaces.

Lignason treatment keeps lumber bright. By C.E. Graves. DuPont magazine. v.52, no.12. 1931. p.4-5.

Painting. (Cont'd.)

Lithopone exterior paints. By Dr. H.H.Morris. DuPont magazine. v.25, no.12. 1931. p.2-3.

New paints from synthetic resins. By D.H.Killeffer. Scientific American. v.145, no.4. October 1931. p.238-239.

Photo-electric cell.

Industry adopts the electron tube: Photoelectric and thyratron tubes have wide utility - Review of typical applications that have been made - Door opening - Spot welding - Wire drawing - Conveyor operations - Lighting control - Rolling - Mill bar cutting - Package wrapping. By B.S. Havens. General electric review. v.34, no.12. December 1931. p.714-721. Majority of tube applications fall into two general classifications:
1. Thyratron tube is used as valve to govern amount of electricity fed to motors, lights, or other devices.
2. Photoelectric tube, acting as relay, controls operation such as counting, starting or stopping motors, lighting signal lamps, etc.

Photo-electric cell and its application to industry. By L.C.Scarborough. Australasian electrical times. v.10, no.10. October 27, 1931. p.403.

Pipes.

Tests on large concrete pipe sewer show Kutter's n to be 0.014; Flow at one-third depth in 60-in. conduit - Velocities measured directly by floats and dye. By Elson T.Killam. Engineering news record. v.107, no.24. December 10, 1931. p.935-936.

Tests reveal low infiltration rate on New Jersey outfall sewer. By Elson T.Killam. Engineering news record. v.107, no.24. December 10, 1931. p.934-935. With diameters varying from 24 to 60 in., total amount of infiltration in length of 20,530 ft. was found to be 1610 gal. per mile per day, only 13 per cent of that allowed by specifications.

Poultry.

Ultra violet plays important part in poultry raising today. By L.C.Porter and C.E.Egeler. Northwest farm equipment journal. v.45, no.12. December 1931. p.16-17. Records indicate that following things may be accomplished: 1. Large increases in number of eggs produced. 2. Increase in size of eggs laid and vitamin D content of their yolks. 3. Decreases of 25 to 40 per cent in number of broken eggs due to thin shells. 4. Increases of 30 per cent or more in hatchability of eggs. 5. Elimination of rickets. 6. 25 per cent increase in rate of growth. 7. Production of larger and stronger pullets in given length of time.

Poultry houses.

Cotton house for hens. By P.H.Gooding. Southern agriculturist. v.56, no.10. October 1931. p.26.

From barn to henhouse: Some suggestions for housing poultry at low cost. American agriculturist. v.128, no.19. November 14, 1931. p.3.

Power.

Future cost of power. Power. v.74, no.25. December 22, 1931. p.908-909. Discussion of outdoor power plants, interconnection, load factors, building domestic load, operating costs. No-load steam consumption should be studied.

Public works.

Large bond issue for public works before U.S.Senate. Engineering news record. v.107, no.27. December 31, 1931. p.1051-1052. Public works administration; Emergency program. Editorial, p.1023.

Timed public works a fallacy. By Ward L.Bishop. Engineering news record. v.107, no.25. December 17, 1931. p.965-967. Postponement of public works in active periods would lead to greater industrial expansion, magnify depression and fail to equalize employment. Financing deferre d works during depression would place strain upon capital market.

Pumps.

Historic engine at Ashton-under-Lyne, England. Southern power journal. v.50, no.1. January 1932. p.22. Old Newcomen atmospheric pumping engine.

Selection and operation of centrifugal pumps. By Marin Phillips. Power. v.74, no.24. December 15, 1931. p.861-863. Instructions for their proper selection, installation and maintenance.

Reclamation.

Annual report. U.S. Commissioner of reclamation. 1931. Washington, 1931. 120p.

Changed problem: Editorial. Engineering news record. v.107, no.25. December 17, 1931. p.951. Aspects of present day reclamation project: 1. Virtual disappearance of undeveloped desert land. 2. Increasingly dominant importance of stream conservation.

Ditching the bed of the Zuider Zee. Farm implement news. v.53, no.1. January 7, 1932. p.28-29.

Further reclamation of arid land essential to western states development. By John W.Haw. New reclamation era. v.22, no.12. December 1931. p.262-265. Need for additional areas; Reservoir construction should precede development; Agricultural foundation for a balanced civilization; Population trend; Western agriculture holds unique position; Increasing population demands adequate livestock; Reclamation expansion furthered by education; Necessity of power production; State cooperation with federal government.

Refrigeration.

Domestic refrigeration - old and new angles. By H.W.McPherson. Refrigerating engineering. v.22, no.5. November 1931. p.306,313,319.

Ice-well refrigeration for dairy farms. By J.R.Dawson. Ice and refrigeration. v.81, no.3. September 1931. p.148-149. Main points suggested for consideration in building ice well are: Select well-drained site; provide for good drainage so water can run away from bottom of pit; locate pit near milk house, and also near water supply; see that floor of house is tight so air circulation will be at minimum in summer.

Non-condensable gas in the refrigerating plant. By Leon Buehler, Jr. Power. v.74, no.25. December 22, 1931. p.891-893. Explanation of few underlying physical facts.

Pak-ice machine: A new development in refrigeration. By William H. Taylor. Refrigerating engineering. v.22, no.5. November 1931. p.307-309.

Power requirements for the manufacture of solid Co2. By F.W.Rabe. Refrigerating engineering. v.22, no.6. December 1931. p.388-391.

Quality vs. transportation. By E.J. Leenhouts. Market growers' journal. v.49, no.12. December 15, 1931. p.705. Merchants Despach refrigerator car.

Refrigeration in farm milk plants. By John E. Nicholas. Refrigerating engineering. v.22, no.6. December 1931. p.379-382. Service operating characteristics.

Refrigeration progress during 1931. By David L. Fiske. Refrigerating engineering. v.22, no.6. December 1931. p.371-378. Survey in new developments. Air conditioning; Domestic commercial refrigeration; Frozen foods; Ice; Industrial machinery; Insulation; Low side developments; Railway refrigeration; Important commercial developments.

Refrigeration turns to industrial applications. Power. v.75, no.1. January 5, 1932. p.34. Advances in refrigeration in 1931 include development of snow machine, extension of ice-flake application, combined diesel-compressor units and improvements in dual-fluid refrigeration.

Refrigerator cabinet. By J.L.Finck and M.S.Van Dusen. Refrigeration engineering. v.22, no.5. November 1931. p.310-313; v.22, no.6. December 1931. p.385-387,406. New heat flow studies. Insulating values of hard wood, thin insulating felts, and air spaces are compared with those of thick insulating materials. Estimates are presented of effect of structural members and materials such as bakelite and asphalt on heat transmission. Simple relation is developed which indicates how average inside temperature of refrigerator cabinet is affected by outside temperature, thickness of insulation, and amount of ice of temperature of evaporator.

Refrigeration. (Cont'd.)

Use of mechanical refrigeration for farm egg storage. By P.T.Montfort. Agricultural engineering. v.12, no.12. December 1931. p.439-441.

Seawalls.

Seawalls protect Florida coast property. Engineering news record. v.107, no.27. December 31, 1931. p.1030-1033. Poured concrete seawall and groins reclaim lost beach. By Fred E.Zurwelle. Seawall combines precast frame and poured parabolic apron. By Carl Weber.

Septic tanks.

Donts for septic tank installations. By W.A.Hardenbergh. Domestic engineering. v.137, no.5. November 28, 1931. p.56,58,60,128-129.

Sewers.

Novel construction of outfall sewer with wood-stave pipe. By E.French Chase. Engineering news record. v.107,no.25. December 17, 1931. p.957-958. Pipe sections fastened together by stapling on longitudinal wires. Line extended into position as built and sunk.

Storm-relief sewer details, Dayton, Ohio. By George R. Barte and R.E.Van Horn. Engineering news record. v.107, no.26. December 24, 1931. p.1007-1009. Flat-top sections necessitated in places by shallow cover and underground obstructions - Invert lined for high velocity - Pressure manholes and junction chambers Design factors.

Silt.

Device secures accurate samples from subaqueous silt beds. By R.W.Ellms. Engineering news record. v.107, no.26. December 24, 1931. p.1011-1012. In its essentials, sampler consists of two seamless steel tubes or casings, one within other. Inner tube is divided into number of compartments by wooden spacers, and each pocket is fitted with cup to facilitate removal of sample. At top of each compartment 180-deg. openings are cut through both tubes. When matched, these admit material to pocket, while 180-deg. rotation of one tube in respect to other serves to close and seal entrance.

Soils.

Coordination of research concerning the flow of water in soils. By O.W.Israelsen. Agricultural engineering. v.12, no.12. December 1931. p.435-438. Fact that conditions which influence flow of water in soils are even more complex than those which influence its flow in rivers, canals, and pipes adds to urgency of need for using well-established basic physical laws concerning flow of liquids and for adoption of basic equation of general application.

Correlation of certain soil characteristics with pipe line corrosion. By I.A.Denison. Washington, 1931. 631-642p. U.S. Bureau of Standards. Research paper no.363.

Fertilization for soil amendment and maintenance. By H.P.Agee. International sugar journal. v.33, no.394. October 1931. p.490-495. If sugar planter could contrive to return his crop residues, he would go far toward maintaining his soil in fertile state. If he cannot contrive to return them - if he finds it more expedient to burn them, or market them, or to let them go to waste, then he has need for his chemist to tell him what he must buy and give his soil in place of them.

Soil-corrosion studies: Nonferrous metals and alloys, metallic coatings and specially prepared ferrous pipes removed in 1930. By K.H.Logan. Washington, 1931. 585-605p. U.S. Bureau of Standards. Research paper no.359.

Soil treatments for the control of diseases in the greenhouse and the seedbed. By A.G.Newhall and Charles Chupp. N.Y., State college of Agriculture. Extension bulletin no.217. 1931. 59p.

Some nitrogen relationship in muck soils. By B.D. Wilson and G.R.Townsend. Cornell university. Agricultural Experiment station. Memoir no.137. 1931. 14p.

Supplementary bibliography relating to the deleterious action of soil alkalies and other chemical agents on cement and concrete. U.S. Department of Agriculture. Bureau of Agricultural Engineering. 1931. 15p. mimeographed.

Spraying and dusting.

Air-pressure extension brush for applying creosote to gipsy moth egg clusters. By C.W. Collins and J.V. Schaffner, Jr. U.S. Department of Agriculture. Circular no.204. 1931. 7p.

Storage houses and cellars.

Air cooled storage houses. By L.B.Reber. Rural New Yorker. v.91, no.5194. January 9, 1932. p.23-24.

Heating and ventilating sweet potato storage houses. By H.E.Lacy. Agricultural engineering. v.12, no.12. December 1931. p.451-452. Conclusions: 1. Shortening draft ducts to minimum gives most effective evaporation. 2, Admission of large amounts of unheated air is highly effective in causing evaporation. 3. To conditions mentioned are conducive to highest fuel economy. 4. Sloping ceilings increasing effective height above top layer of crates and tending to streamline exhaust currents to vents in ridge, are conducive to greater uniformity in temperature. 5. Most uniform temperatures are obtained with distributed heat. 6. Uniformity of temperature characteristics is accompanied by uniformity of relative humidity and uniformity of evaporative and curing rates through storage space.

Keeping apples through the winter. By J.R.C. Southern agriculturist. v.56, no.10. October 1931. p.4.

Storing potatoes in pits. By Andrew Boss. Farmer. v.49, no.42. October 31, 1931. p.4. Diagram of pit storage.

Sweet potato storage. By J.R.Cooper. Southern agriculturist. v.56, no.10. October 1931. p.4,20. Ventilation most important; Soil condition; Curing; Storing for home use.

Sugar beets.

New method of drilling and cultivation: Reducing cost and increasing yield. By Otto Vosbein. British sugar beet review. v.5, no.4. December 1931. p.81-82.

Sugar cane.

Cane harvester tests in Cuba encouraging.
Farm implement news. v.52, no.50. December 10, 1931. p.9. Falkiner cane harvester. Cane harvester cuts, strips and loads sugar cane. Operates under its own power by means of crawler tracter, which uses either gasoline or combination of gasoline and alcohol as fuel. As harvester advances, cane is clipped close to ground and cut in short lengths. Cut cane is fed up to blower, by means of endless belt mechanism, which blows off leaves and unusable parts. Short pieces of cane then pass through to conveyor which feeds cane to cane cart drawn by tractor parallel to harvester and at same speed.

Terracing.

Terracing suggestions. Farm machinery and equipment. no.1775. November 15, 1931. p.24. Good terraces depend on: 1. Location of first terrace. 2. Selection of good outlets. 3. Proper spacing of terraces. 4. Proper grade to terrace line. 5. Proper size of terraces.

Tractors.

Some cost figures on tractor operation: Editorial. Farm implement news. v.52, no.50. December 10, 1931. p.10. Cost figures given out by Illinois Agricultural Experiment Station, amount to 61.9c per tractor hour, tractor having been used 3,584 hours in 7 years of use. Tractor develops 20 H.P., cost per horse power hour on belt is 2 1/2 c. equivalent to 3 1/2 c per Kw-Hr. for electric energy. On drawbar work, cost figures about 5 c horse power hour. Fuel consumption during seven years averaged 1.45 gals. an hour, and crankcase oil consumption .668 gal. for each 10-hour day. Of fuel consumed, about 92 1/2 per cent was kerosene.

Tunnels.

Tunnel concreting and surveying at Cobble Mountain. By Harry H.Hatch. Engineering news record. v.107, no.26. December 24, 1931. p.988-990. Comparison of methods and costs of lining of two tunnels on Springfield's new water supply and hydro-electric project - Control of lines and grades - Pantograph sections used to compute quantities.

Tunnels. (Cont'd.)

Tunnel grouting at Cobble mountain. By Harry H.Hatch. Engineering news record. v.107, no.27. December 31, 1931. p.1037-1039. Procedure,results and cost of well-planned grouting systems on two tunnels on Springfield, Mass., water supply and hydro-electric project.

Ventilation.

Air cooling with ice: Proper and scientific use of ice as cooling agent in air-cooling. Conditioning of air at various temperatures. Effective temperatures desired inside for various outdoor weather conditions. Development of cooling machines. Estimating capacities for home cooling. By F.A.Kitchen. Ice and refrigeration. v.81, no.3. September 1931. p.137-138.

Changes in ionic content of air in occupied rooms ventilated by natural and by mechanical methods. By C.P. Yaglou, L.Claribel Benjamin and Sarah P.Choate. Heating, piping and air conditioning. v.3, no.10. October 1931. p.865-869. Properties,formation and destruction of ions; Measurement of ionic content of air; Influence of respiration and transpiration on ionic content in occupied rooms; Outdoor air supply in relation to ionic content; Artificial ionization; Influence of air-conditioning methods on ionic content.

Developments in heating and ventilating. Power. v.75, no.1. January 5, 1932. p.31. Attention has been given to improvements in control equipment for orificed heating systems, thermostatic radiator valves, and air-conditioning units.

Electric dairy stable ventilation. By F.L.Fairbank. Agricultural engineering. v.12, no.12. December 1931. p.443-445.

Ventilating farm buildings. Electricity on the farm. Merchandising supplement. v.14, no.12. December 1931. p.S8-S12.

Ventilation codes: Editorial. Aerologist. v.7, no.12. December 1931. p.23. Discussion: Codes to be proposed by American society of heating and ventilating engineers and N.Y. Commission on ventilation.

Waste products.

Industrial waste disposal as a chemical problem. By E.B.Besselievre. Chemical and metallurgical engineering. v.38, no.9. September 1931. p.498-503.

Water.

Diversion of interstate waters for domestic waters for domestic water supply. By Frank E. Winsor. New England water works association. Journal. v.45, no.3. September 1931. p.267-311. Litigation and U.S. Supreme court decision in case of Connecticut vs. Massachusetts.

Heat of ionization of water. By Frederick D.Rossini. Washington, 1931. 847-856p. U.S. Bureau of Standards. Research paper no.309.

Law of interstate waters and its application to the case of the Delaware river. By Thaddeus Merriman. New England water works association. Journal. v.45, no.3. September 1931. p.199-266.

Relation of the method of watering dairy cows to their water consumption and milk production. By T.E. Woodward and J.B.McNulty. U.S. Department of Agriculture. Technical bulletin no.278. 1931. 13p.

Santa Clara valley moves up on water. By George C.Payne. California cultivator. v.77, no.20. November 14, 1931. p.443,451.

Surface waters of Tennessee. By Warren R. King. Tennessee. Division of Geology. Bulletin no. 40. 1931. 165p. Chapter on flood conditions for rivers other than Mississippi.

Water does not wait for prosperity. American thresherman. v.34, no.8. December 1931. p.13.

Water power.

Hydro-electric prospects exceed expectations. Power. v.75, no.1. January 5, 1932. p.23-27. Water-power plants with aggregate capacity of over 900,000 hp. put into operation in U.S. and 700,000 hp. in Canada during 1931.

Water power. (Cont'd.)

Water power in its economic aspects. By Geo. A. Orrok. Electrical world. v.98, no.24. December 12, 1931. p.1036-1038. Maximum possible output of water power in this country would cost three or four times more than equivalent steam power.

Water supply, Rural.

Profits from running water stresses. By E.T.Leavitt. Northwest farm equipment journal. v.45, no.12. December 1931. p.17,20. According to Iowa Engineering Experiment Station, few investments will yield better and larger returns than the water system. Their report of Iowa electrification project on which they base this conslusion showed that it requires from slightly more than one to little over two kilo-watt-hours to pump 1,000 gallons of water with farm water system, depending upon nature of installation.

Wind.

Surface coefficients as affected by direction of wind. By F.B.Rowley and W.A.Eckley. Heating, piping and air conditioning. v.3, no.10. October 1931. p.870-874.

Wind pressure on skyscraper tested. Commercial standards monthly. v.8, no.6. December 1931. p.164. Tests of wind pressure on model of Empire State building being conducted at U.S. Bureau of Standards.

Wood.

Determination of the moisture content of wood by electrical means. By Dr. C.G.Suits and M.E.Dunlap. General electric review. v.34, no.12. December 1931. p.706-713.

New wood preservative. By J.D.Long. Country gentleman. v.101, no.11. November 1931. p.24. New method is the placing of dry powdered or crystalline poison in holes bored in post at ground line or in ring around post some six inches below ground surface. Poisons are soluble in water and dissolve in moisture entering post from ground. In solution they are distributed up and down post, wood fibers acting as wick.